

Texas, Vt., Va., Wis., W. Va., Fla., Ky.; 6th, Del., Ala., Conn., Del., Ga., Ill., Ind., Me., Md., Mass., N. J., S. C., Tenn., Vt., Fla.; 7th, Conn., Iowa, La., Minn., Wis., Mich., Fla., Kan., 8th, N. Y., R. I., W. Va., Ill., Ind., Iowa, Kan., Mo., Neb., Ohio, Vt., Wis., Fla.; 9th, Conn., Ind., Kan., Mass., N. H., N. J., N. Y., Ohio, Penn., Vt., Va., Wis., Ill., Ky., W. Va., Minn., Ind., Ty., Mo.; 10th, W. Va., Conn., Ga., Ind., Me., Md., Mass., N. J., N. Y., N. C., Ohio, Texas, Vt., Va., Tenn., Minn., W. Va., Ala., N. H., La.; 11th, Dak., Del., Iowa, Md.; Neb., N. J., Penn., S. C., Texas, Va., W. Va., W. Va., Ga., N. C.; 12th, Conn., Dak., N. Y., Vt., Mich.; 13th, Dak., Conn., Mass., Minn., N. J., N. Y., S. C., Md., Col., R. I., Texas, Penn.; 14th, Dak., Me., Neb., Tenn., Texas, Mass., Mich.; 15th, S. C., Ill., Iowa, Kan., Neb., N. C., Tenn., Wis., N. J., Vt., Mich., Texas, Mo.; 16th, Mich., N. Y., Conn., Ill., Ind., Iowa, Kan., Mass., Mo., Neb., Ohio, Tenn., Texas, Va., Wis., Vt., W. Va., Miss.; 17th, N. Y., Conn., Iowa, Kan., Me., Mass., Mo., Neb., N. H., N. J., N. C., Penn., Vt., Va.; Wis., Mich., Ind., Ty., Md.; 18th, Mich., Cal., Ill., Ind., Kan., N. J., N. Y., Ohio, Penn., Tenn., Texas, Va.; Md., Ky.; Ind., Ter.; 19th, Mich., N. Y., Conn., Md., N. J., N. Y., N. C., Penn.; S. C., Va., W. Va., Ga., N. H., Texas; 20th, Mich., Nev., N. J., N. C., Penn., S. C., Vt., Vt., Dak., Cal.; 21st, Ga., N. C., S. C., Nev.; 22nd, N. C., Tenn., Va.; Wis., Mich., W. Va.; 23rd, N. J., N. C., Va., W. Va., Tenn., Fla.; 24th, W. Va.; Ind., La., Mo., Neb., Ala., Va., Texas; 25th, Dak., Mich., La., Md., N. C., Ohio, Tenn., Va., Ill., Me., W. Va., Ala., Texas; 26th, Ala., Dak., Ill., Iowa, Me., Mich., Ohio, Penn., Vt., Va., Wis., N. C., Texas, Mo., Neb., Kan.; 27th, Dak., Neb., Ala., Ark., Conn., Del., Ill., Ind., Iowa, Kan., La., Md., N. J., N. Y., Ohio, Penn., Va., W. Va.; Mich., Wis., Ind., Ty., Texas; 28th, Va., Ill., Ind., Iowa, Kan., Md., Miss., Neb., N. J., N. Y., N. C., Ohio, Penn., Ky., Ind., Ty., W. Va., Tenn., Texas, La.; 29th, Dak., Ga., Kan., Md., Mass., N. J., N. Y., N. C., Ohio, Penn., Tenn., Fla., Va., Ind., Ty.; 30th, Dak., Neb., Ark., Conn., Kan., N. J., N. Y., N. C., Penn., Va., S. C., Ala., Ga.; 31st, Dak., Ill., Iowa, Mo., Neb., N. J., N. Y., S. C., Vt., Minn.

Distant thunder or lightning was reported as seen from stations in the respective States as follows: 1st, Dak., Conn., Del., Ga., Ill., Ind., Iowa, Kan., Ky., Me., Md., Miss., Mo., Neb., N. J., N. Y., Ohio, S. C., Tenn., Va., Vt.; 2nd, Ala.; Del., Ga., Ill., Ind., Iowa, Me., Md., Minn., Md., N. C., Ohio, Tenn., Va., Wis., W. Va.; 3d, Conn., Del., Fla., Ga., Ind., Iowa, La., Md., Miss., Md., N. J., N. Y., N. C., Ohio, Penn., Va.; 4th, Ga., Ill., Ind., Iowa, Ky., Mich., Md., N. C., Ohio, S. C., Va., Wis., W. Va.; 5th, Dak., Del., Ill., Ind., Iowa, La., Mich., Mo., N. J., N. Y., N. C., Ohio, Pa., S. C., Tenn., Vt., Va.; 6th, Conn., Dak., Ga., Ill., Mo., N. J., N. Y., Texas, Vt., W. Va.; 7th, Dak., Ind., Ill., Iowa, Kan., La., Mich., Minn., Mo., Neb., N. Y., Wis., W. Va.; 8th, Ga., Ill., Ind., Iowa, Kan., Mass., Mich., Mo., N. Y., Ohio, Vt.; 9th, Fla., Ga., Ill., Iowa, Me., Md., Mass., Mich., N. Y., Ohio, Pa., Tenn., Texas, Vt., Va.; 10th, Ind., Ky., La., Me., Mass., Mich., Miss., N. J., N. Y., N. C., Ohio, Texas, Utah, Vt., Va.; 11th, Ala., Col., La., Me., N. J., N. C., Tenn., Va.; 12th, Col., Dak., Fla., La., Mich., N. Y., Tenn., Texas, Vt.; 13th, Col., Conn., Dak., Iowa, Kan., Md., Mass., Minn., Neb., N. J., N. Y., R. I., Texas; 14th, Ala., Dak., Iowa, La., Minn., Mo., Texas; 15th, Ala., Ill., Iowa, Kan., La., Mich., Minn., Neb., N. M., N. C., Tenn., Texas; 16th, Ind., Ty., Ind., Iowa, Kan., Md., Mich., Mo., Neb., N. Y., N. C., Ohio, Pa., Texas, Va.; 17th, Conn., Del., Ill., Iowa, Kan., Me., Miss., Mich., Mo., Neb., N. Y., N. C., R. I., Tenn., Vt., Wis.; 18th, Ala., Ill., Iowa, Ky., Mich., Neb., N. Y., Ohio, Pa., Texas, Va.; 19th, Ala., Ind., Ty., Ind., Iowa, La., N. J., N. Y., N. C., Pa., R. I., Texas, Va.; 20th, Cal., Col., Ind., N. J., Pa., Vt.; 21st, Ind., Ty., Mich., N. M., S. C.; 22nd, Kan., S. C.; 23d, Ga., Utah; 24th, Cal., Ga., Ind., Iowa, Ky., Mo., Neb.; 25th, Dak., Ill., Mo., N. C., Ohio, Texas; 26th, Dak., Ill., Ind., Iowa, La., Me., Md., Mich., Neb., N. Y., Ohio, Texas, W. Va., Va.; 27th, Ala., Conn., Dak., Ind., Ty., Ill., Ind., Iowa, Kan., Md., N. J., N. Y., N. C., Ohio, Pa., Texas, Va.; 28th, Conn., Ill., Ind., Ky., Md., Mich., N. J., N. Y., N. C., Ohio, Pa., Tenn., Texas, Va.; 29th, Dak., Ga., Ind., Ky., Neb., N. Y., N. C., Ohio, Penn., S. C., Tenn., Texas; 30th, Conn., Dak., Fla., Ga., Ind., Ind., Ty., Md.; N. H., Neb., N. J., N. Y., Pa., W. Va.; 31st, Dak., Ga., Ill., Iowa, Kan., Me., Mo., Neb., N. J., N. C.

Auroras were observed as follows: 1st, Williamsport, Pa. 2nd, Williamsport, Pa. 3rd, Bangor, Me. 5th, Olympia, Washington Territory. 6th, Vevay, Ind., Wappinger's Falls, N. Y. 7th, Sandwich, Ill., Bangor, Me.; Boston, Mass.; Duluth, Minn.; Pembina, D. T. 8th, Mt. Forest, Can.; Minneapolis. 9th, Clear Creek, Neb.; Alpena and Escanaba, Mich.; Fort Brady, Mich. 10th, Escanaba, Mich. 11th, Mt. Forest, Can. 21st, Burlington, Vt. 22nd, Bangor, Me. 24th, Mt. Forest, Can. 25th, Mt. Forest, Can. 28th, Vevay, Ind. 30th, West Charlotte, Vt.; Fort Brady, Mich. 31st, Escanaba, Mich.; Fort Brady, Mich.; Minneapolis, Minn.

Ground Currents.—Disturbances on lines of telegraph have been reported as follows: at Wappinger's Falls, N. Y., on the 17th; Santa Fe, N. M., 13th; 16th, 19th; 20th, so strong in some cases as to materially hinder operations of telegraph lines.

OPTICAL PHENOMENA.

Solar halos were observed on the 1st in Ill., N. Y., Ohio, Kan. 2nd, Conn., Ky., Me., N. Y., Pa., R. I., 3rd, Ky., Me., Mass., N. H., N. Y., R. I. 4th, La., Neb., Ohio, Mich. 5th, Ky., Me., Mass., N. Y., R. I.

6th, Iowa, Mass., Ohio, Utah, Me. 7th, Iowa, N. Y. 8th, N. Y. 11th, Fla. 12th, Fla. 13th, Iowa, Neb., Cal., Miss., Fla. 14th, Tenn., Ky. 15th, Conn., W. Va., N. C., N. Y., Fla., N. H. 16th, Iowa, Me., R. I. 17th, Ill., Ind., Ga., S. C. 18th, Ind., Mass., S. C., Pa., Ala., N. Y., La. 20th, Ill. 22nd, Ind., Mo., Ohio, Me., Ala. 23rd, Mich., Ohio, Ky., R. I. 24th, N. J. 25th, Ill., Mich., S. C., Fla. 26th, Ohio, Dak., S. C. 27th, N. C. 28th, Iowa, Neb., N. C., S. C. 30th, N. Y., Ohio, Ind., Minn., Dak.

Lunar halos were observed on the 1st, Ill.; 3rd, Va.; 6th, Utah; 10th, Mo.; 14th, Ind., Mo., Nev.; 15th, Ind., N. C., Va., Ohio; 16th, Va., Conn., Minn., Texas; 17th, Ind., Ohio, Tenn., Ky., Texas; 18th, Del., Pa., N. J., Va., Ohio; 19th, N. C.; 20th, Me., Fla.; 21st, Tenn., Mo.; 22nd, Ind., Va., S. C., Ky., Ohio, Minn., Tenn.; 23rd, Ohio, Mass., Ky., Ind., R. I., Minn., Va.; 24th, Ind., Ohio, Tenn., Minn., Kan.; 25th, Ill., Mass., S. C., Dak.; 26th, Pa., Tenn., Ky., N. C., Ala.; 27th, N. C., Mo., Ohio; 28th, Ky., Neb., Pa.; 29th, Can., Ohio, N. C., Va., Conn.; 30th, Dak.

Mirage was observed at Westport, Mass., 15th; Genoa, Neb., 31st; about 12 or 15 miles from Denver, Col., down the valley of the Platte, 30th; Denver, Col., 29th, 30th, 31st; Duluth, Minn., 14th; New London, Conn., 13th; Tybee Island, Ga., 26th, 27th, 28th.

Rainbows.—Four were observed at Vevay, Ind., on the 5th. "The rainbow proper presented a full and well-defined arch, extending from horizon to horizon; interior were three well and sharply-defined images, the breadth of each decreasing towards the centre. The exterior ring was but faintly defined in prismatic colors. It is noteworthy that not a drop of rain fell during the occurrence."

MISCELLANEOUS PHENOMENA.

Zoological—*BOTANICAL*.—Harvesting began as follows: *Barley*, 6th, Monticello, Iowa; 11th, Oregon, Mo. *Oats*, 13th, Cresswell, Kan.; 18th, Jacksonburg, Ohio; 19th, Oregon, Mo.; 20th, Wappinger's Falls, N. Y.; 20th, 21st, Riley, Kan. *Rye*, 2nd, Oregon, Mo.; 6th, Monticello, Iowa. "*heat*, (winter,) 2nd, (spring,) 16th, Oregon, Mo.; 12th, Nichols, N. Y.; (spring,) 13th, Cresswell, Kan.; (spring,) 21st, Monticello, Iowa. *Hay*, 3rd, Monticello, Iowa, and Oregon, Mo.; 11th, Palermo, N. Y.; 14th, New London, Conn.; 19th, Jacksonburg, Ohio.

FRUITS—Blooming and ripening, are reported as follows: *Blackberries*, ripe 4th, Independence, Kan.; 7th, Vineland, N. J.; 12th, Wappinger's Falls, N. Y.; 21st, Jacksonburg, Ohio. *Cherries*, ripe, 4th, Cornish, Me.; 12th, West Charlotte, Vt. *Currants*, ripe, 6th, Wappinger's Falls, N. Y. *Peaches*, ripe, 6th, Independence, Kan.; 16th, (two weeks late) Carbondale, Ill. *Raspberries*, ripe, 1st, Monticello, Iowa; 4th, Jacksonburg, Ohio. *Apples*, ripe, 7th, Vineland, N. J.; 12th, Fort Madison, Iowa; 18th, Oregon, Mo.; 21st, Wappinger's Falls, N. Y. *Watermelons*, ripe, 16th, Carbondale, Ill. *Figs*, ripe, 4th, New Orleans, La. *Apricots*, ripening, 13th, Oregon, Mo.; ripe, 20th, Wappinger's Falls, N. Y. *Gooseberries*, ripe, 19th, Wappinger's Falls, N. Y.

FLOWERS AND TREES.—*Tiger Lilies*, blooming, 14th, and *Common Lilies*, 16th, Monticello, Iowa. *White Elder*, flowering, 5th, Cornish, Me. *Purple Vervain*, flowering, 1st, and *Common Milkweed* and *Pleurisy Root*, 2d, Oregon, Mo. *Sweet Elder*, blooming, 2d, Palermo, N. Y.

BIRDS.—9th, Contoocookville, N. H., *Quail* heard—uncommon occurrence, happening not more than once in a season.

INSECTS.—*Katy-dids*, first heard, 12th, Anna, Ill.; 22d, Ringgold, Ohio; 26th, Hennepin, Ill. and Bethel, Ohio; 28th, Plattsburgh, Neb. and Bloomfield, Wis.; seen hatching, 18th, Wappinger's Falls, N. Y. *Chintz Bugs*, 15th, very numerous at Guttenburg, Iowa; "destroying thousands of bushels of wheat," Wautoma, Wis., damaging wheat, which yields only two-thirds of average crop. *Harvest Flies*, 19th, Oregon, Mo., casting pupae coat; 25th, Woodstock, Vt.; 26th, Somerset, Mass. *Fireflies*, 21st, last seen at Linden, N. J. *Mass Flies*, 15th, Ringgold, Ohio. *Grasshoppers*, Dakota Ty., Morrilton, destroying crops, 6th and 21st; Yankton, flying west and northwest, 3d, southeast, 17th and 28th. Nebraska, Genoa, flying north, 5th, 6th, 7th, 11th, 12th, 13th, 21st, 22d and 25th, descending, 29th, flying south, 30th and 31st; Plattsburgh, flying north, 22d to 27th; none lighting; Clear Creek, flying southeast, 1st, northerly, 3d, 4th, 5th, 6th and 7th, lighting, 9th, flying north, 10th, 12th, 13th and 14th, lighting, 15th, flying, 22d, 23d, 28th, 29th and 30th. During the month they have injured wheat crop, three-fourths, barley, one-half, oats a small percentage, corn but little. North Platte, 3d, a few flying westward; Omaha, an immense swarm flying northwest, 11th, 12th and 31st, none lighting. Minnesota, St. Paul, flying southeast, 20th. Dakota, Bismarck, flying from southeast to northwest, 21st and 24th; north, 25th, 26th and 27th; abundant on ground, 28th and 29th; destroying wheat, 31st. Minnesota, Breckenridge, flying north and northwest, 3d, 4th, 6th, 11th, 13th, 14th, 19th, 20th, 22d and 30th; some damage done during month. Kansas, Fort Larned, flying north, very high; Cresswell, flying from northeast to southwest; Denver, on the 31st, reports no flying grasshoppers yet and the native ones doing no damage. Missouri, Oregon, beginning to fly, 1st, flying south,